

8-80
C. J. Hoffstedt
M 253



Transportation Analysis

State of Minnesota
Department of Transportation
Bureau of Policy and Planning

Office Memorandum

DEPARTMENT OF TRANSPORTATION

Room 813

TO : C.J. Hoffstedt
Transportation Planning Engineer
District #5 - Golden Valley

DATE: August 27, 1980

FROM : Kenn Kopitzke *Kenn Kopitzke*
Traffic Forecasts Section

PHONE: 296-6759

SUBJECT: Proposed I-394 From West Junction TH 101 (Wayzata)
To Junction Washington Avenue (Downtown Minneapolis)
S.P. 2789-01
Transportation Analysis Report M-253

8/80

Previous reports on subject route: SPAR M-202 (April, 1978); SPAR M-202A (June, 1978);
TAR M-241 (January, 1980); TAR M-241A (February, 1980); HOV supplement to SPAR M-202A
(February, 1980); TAR M-250 (May, 1980); TAR M-250A (July, 1980).

Projected year 2000 volumes for I-394 from Wayzata to downtown Minneapolis are attached.
Volumes are shown on three separate blue line prints as follows:

- 1) Figure 1 - I-394 from west junction TH 101 (Wayzata) to West Ring Route (I-94) in Minneapolis.
- 2) Figure 2 - Main line I-394 (3rd Avenue North Distributor) from West Ring Route (I-94) to Washington Avenue.
- 3) Figure 3 - I-394 (3rd Avenue Distributor) from West Ring Route (I-94) to Washington Avenue with local street volumes in downtown Minneapolis shown.

The volumes shown on the three attached blue line prints (i.e. Figures 1, 2, and 3) are based on the Metropolitan Council's System 2A Computer Traffic Assignment with the additional assumption that HOV (High Occupancy Vehicle) lanes will be constructed as part of the proposed I-394 facility. (See HOV supplement to SPAR M-202A for additional information)

In addition to the volumes presented on Figures 1, 2, and 3 the following tables and graphs are attached showing hourly traffic breakdowns:

- 1) Table 1N with graph for the "no build" condition on TH 394
- 2) Table 1F with graph for the "freeway" condition on TH 394
- 3) Table 2 which presents vehicle type distributions for TH 394
- 4) Table 3 with graph for frontage roads and cross streets

C.J. Hoffstedt
August 27, 1980
Page Two

- 5) Table 4 for I-494 north of TH 12
- 6) Table 5 for I-494 south of TH 12
- 7) Table 6 for CSAH 18 south and north of TH 12
- 8) Table 7 for TH 100 south and north of TH 12

Also, origin-destination data is presented in tables 8, 9, and 10.

It should be noted that "no build" volumes are presented in TAR M-241.

In addition, detailed design hour volumes for TH 394 in the vicinity of the Ridgedale Shopping Center are presented in TAR's M-250 and 250A. (See note on Figure 1)

Attachments

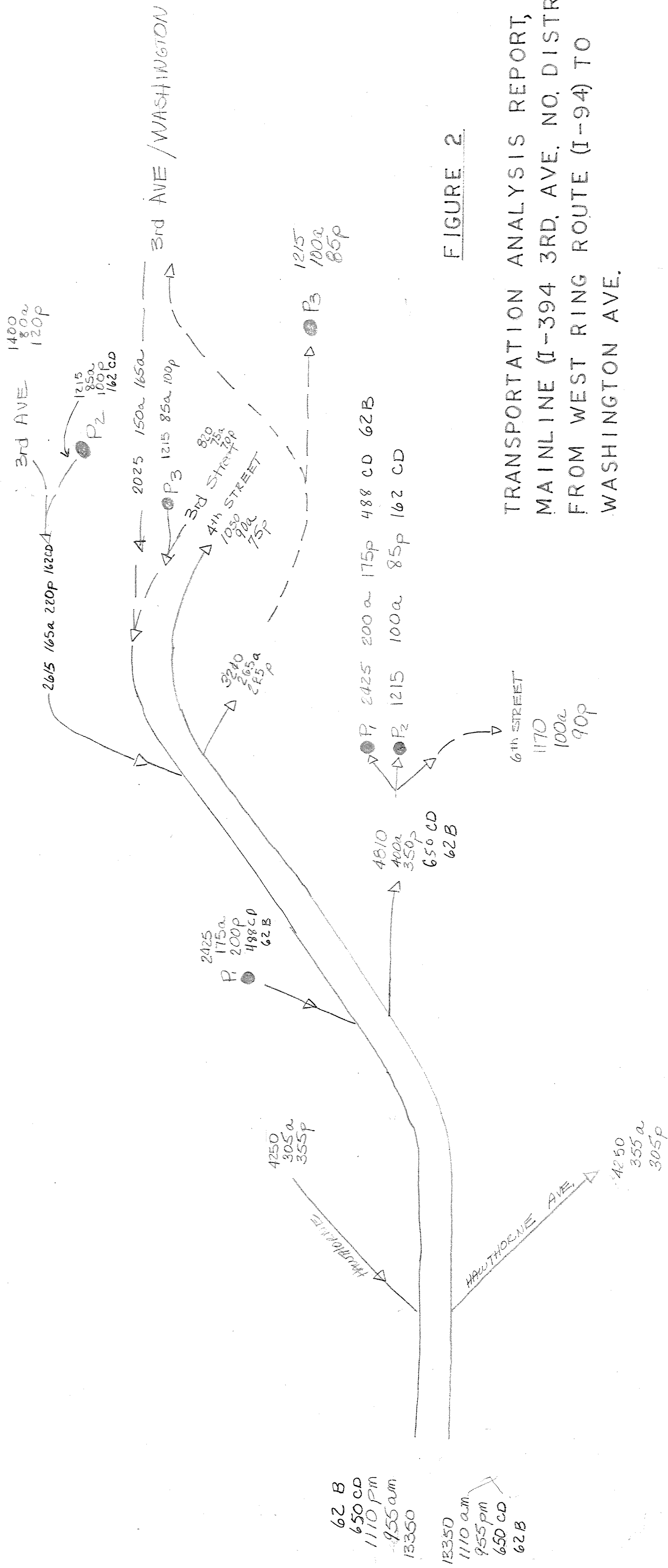


FIGURE 2

TRANSPORTATION ANALYSIS REPORT, M-253
 MAINLINE (I-394 3RD. AVE. NO. DISTRIBUTOR)
 FROM WEST RING ROUTE (I-94) TO
 WASHINGTON AVE.

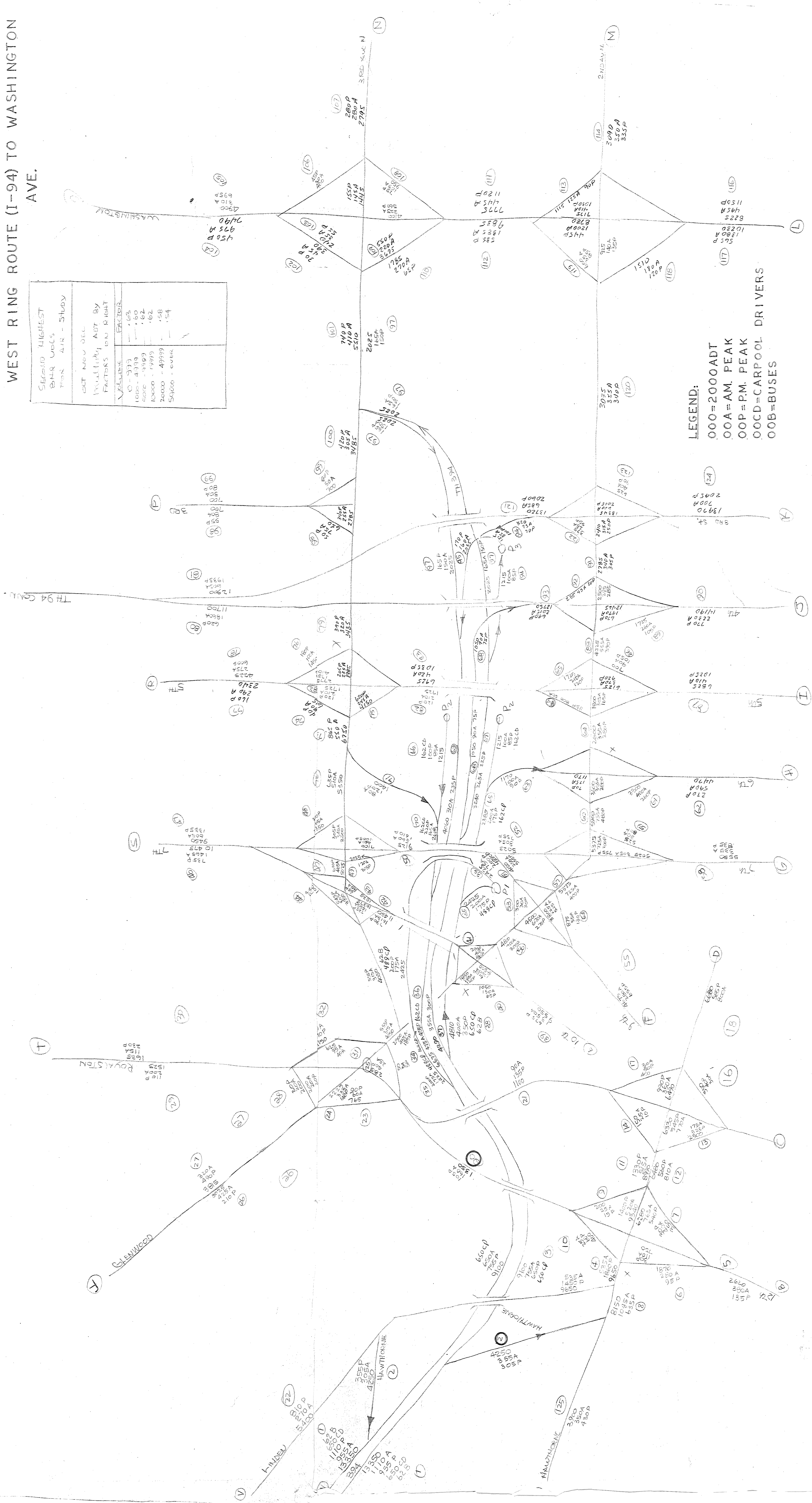
LEGEND:

- 000=2000ADT
- 00A=AM. PEAK
- 00P=PM. PEAK
- 00CD=CARPOOL DRIVERS
- 00B=BUSES

AUTO DRIVERS { 13350 ONEWAY ADT
 { 1110 am ONE WAY am PEAK HOUR
 { 955 pm " " pm " "
 HOV LANES { 650 CD CARPOOL DRIVERS
 { 62 B BUSES

FIGURE 3

TRANSPORTATION ANALYSIS REPORT, M-253
I-394 (3RD. AVE. NO. DISTRIBUTOR) FROM
WEST RING ROUTE (I-94) TO WASHINGTON
AVE.



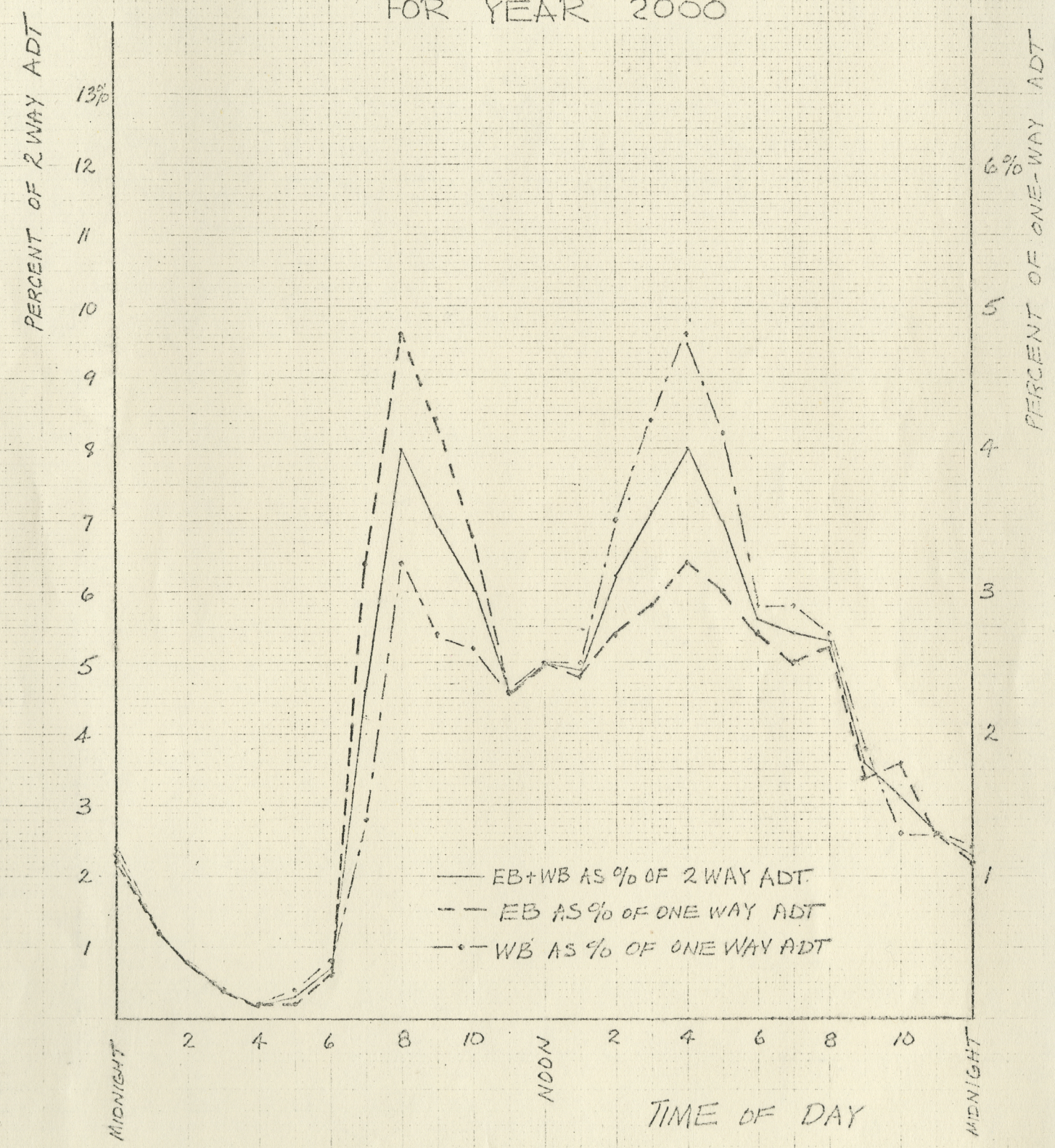
NO BUILD

Hour	Hourly % OF ADT	Hourly Directional Distribution		Hourly HCADT % of Hourly ADT	HCADT Split Single Unit - Semi's
		EB	WB		
12-1 am	1.2%	46%	54%	3.7%	70% S.U.
1-2	.8	50	50	2.5	80
2-3	.4	50	50	2.4	99
3-4	.2	50	50	1.8	99
4-5	.3	33	67	1.5	99
5-6	.7	43	57	3.0	80
6-7	4.6	70	30	4.4	57
7-8	8.0	60	40	3.5	74
8-9	6.9	61	39	5.2	78
9-10	6.0	57	43	7.4	69
10-11	4.6	50	50	8.4	69
11-12	5.0	50	50	6.4	67
12-1 pm	4.9	49	51	6.5	70
1-2	6.2	44	56	5.4	71
2-3	7.1	41	59	4.8	64
3-4	8.0	40	60	2.6	69
4-5	7.0	42	58	2.2	55
5-6	5.6	48	52	2.6	61
6-7	5.4	46	54	2.6	75
7-8	5.3	49	51	1.5	60
8-9	3.6	47	53	1.5	56
9-10	3.1	58	42	1.2	4.4
10-11	2.5	50	50	3.8	13
11-12	2.3	48	52	3.7	13

High Day of Week Factor = _____

High Month of Year Factor = _____

HOURLY BREAKDOWN OF ADT I 394 NO-BUILD ALTERNATE FOR YEAR 2000

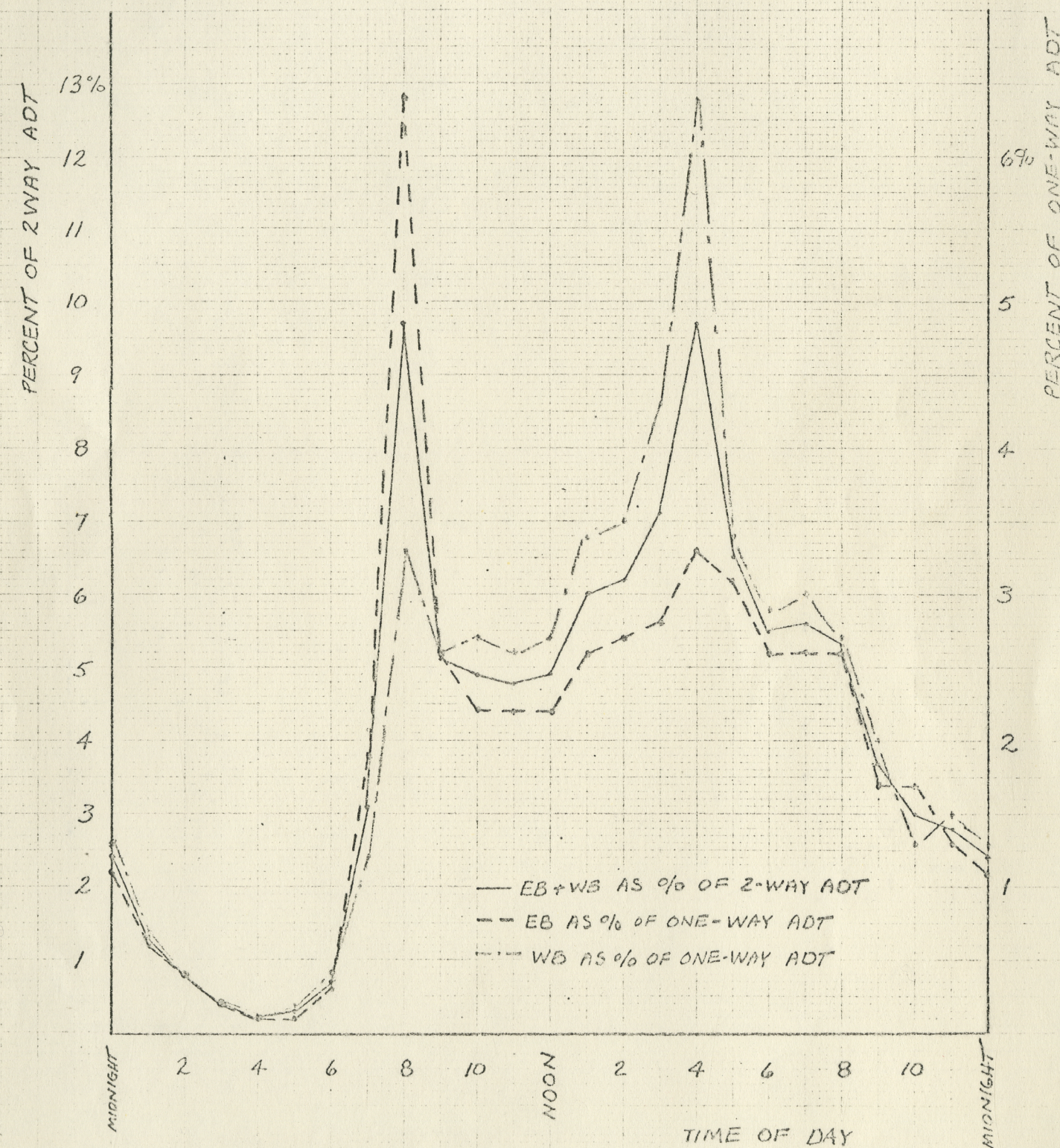


Hour	Hourly % Of ADT	Hourly Directional Distribution		Hourly HCADT % of Hourly ADT	HCADT Split Single Unit - Semi's
12-1 am	1.3%	EB	WB	3.7%	70% S.U.
1-2	0.8	45	55	2.5	80
2-3	0.4	46	54	2.4	100
3-4	0.2	46	54	1.8	100
4-5	0.3	46	54	1.5	100
5-6	0.7	46	54	3.0	80
6-7	3.1	60	40	4.4	57
7-8	9.7	66	34	3.5	74
8-9	5.1	50	50	5.2	78
9-10	4.9	45	55	7.4	69
10-11	4.8	45	55	8.4	69
11-12	4.9	45	55	6.4	67
12-1 pm	6.0	43	57	6.5	70
1-2	6.2	43	57	5.4	71
2-3	7.1	39	61	4.8	64
3-4	9.7	34	66	2.6	69
4-5	6.5	48	52	2.2	55
5-6	5.5	47	53	2.4	61
6-7	5.6	46	54	2.6	75
7-8	5.3	44	51	1.5	60
8-9	3.7	45	55	1.5	56
9-10	3.0	58	42	1.2	44
10-11	2.8	46	54	3.8	73
11-12	2.4	46	54	3.7	73

High Day of Week Factor = _____

High Month of Year Factor = _____

HOURLY BREAKDOWN OF ADT

I 394 FREEWAY ALTERNATE
FOR YEAR 2000

2/80 RJM

TABLE 2 - T.H. 399 HOURLY TRAFFIC BREAKDOWN

Hour	Cars Panels Pickups } Light Trucks	medium Trucks	Heavy Duty Trucks	Buses
12-1 am	96.3%	2.2%	1.1%	0.3
1-2	97.5	2.0	0.5	*
2-3	97.6	2.4	*	*
3-4	98.2	1.8	*	*
4-5	98.5	1.5	*	*
5-6	97.0	2.4	0.6	*
6-7	95.6	2.1	1.8	0.4
7-8	96.5	1.8	0.9	0.7
8-9	94.8	3.4	1.1	0.7
9-10	92.6	4.5	2.3	0.6
10-11	91.6	5.2	2.6	0.5
11-12	93.6	3.8	2.0	0.4
12-1 pm	93.5	4.2	2.0	0.4
1-2	94.6	3.6	1.5	0.2
2-3	95.2	2.7	1.8	0.3
3-4	97.4	1.6	0.9	0.2
4-5	97.8	0.8	1.0	0.4
5-6	97.4	1.0	1.1	0.6
6-7	97.4	1.5	0.5	0.5
7-8	98.5	0.6	0.6	0.3
8-9	98.5	0.5	0.6	0.2
9-10	98.8	0.3	0.7	0.2
10-11	96.2	2.3	1.0	0.4
11-12	96.3	2.3	1.1	0.4
	95.9%	2.4%	1.2%	0.4%

* LESS THAN 0.1%

TABLE 3 - T.H. HOURLY TRAFFIC BREAKDOWN

FRONTAGE ROADS
CROSS STREETS

Hour	MEAN F.R. BREAKDOWN AS HOURLY % OF 2WAY ADT	MEAN CROSS STREET AS HOURLY % OF ADT
12-1 am	0.5	0.9
1-2	0.3	0.5
2-3	0.2	0.3
3-4	0.2	0.2
4-5	0.1	0.2
5-6	0.4	0.8
6-7	2.3	3.7
7-8	7.2	7.7
8-9	6.8	6.2
9-10	4.6	4.9
10-11	4.5	4.5
11-12	6.8	5.1
12-1 pm	7.9	5.9
1-2	7.0	5.5
2-3	6.4	6.2
3-4	7.0	7.3
4-5	9.2	9.4
5-6	8.1	9.0
6-7	5.5	6.0
7-8	4.2	5.0
8-9	3.2	3.4
9-10	3.0	3.4
10-11	1.7	2.3
11-12	1.0	1.6

HOURLY BREAKDOWN OF 2-WAY FR. ADT

MEAN OF 37 LOCATIONS AFTER
THE HIGH AND LOW VALUES FOR
EACH HOUR HAS BEEN DISCARDED

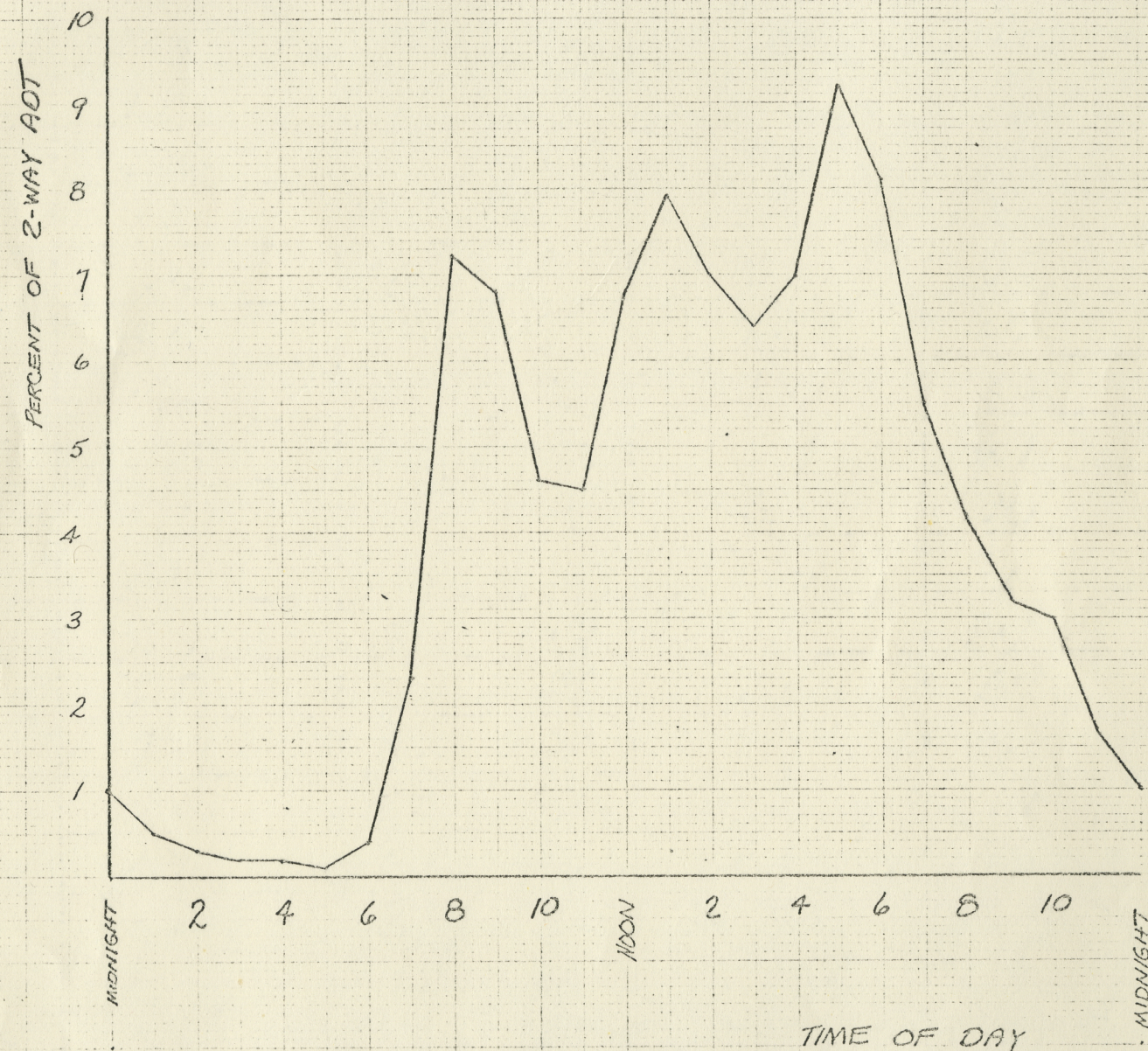


TABLE 4 - T.H. 494 HOURLY TRAFFIC BREAKDOWN I494 N.G.T.H.12

Hour	Hourly % Of ADT	Hourly Directional Distribution		Hourly HCADT % of Hourly ADT	HCADT Split Single Unit - Semi's
		N.B.	S.B.		
12-1 am	1.0 %	63	37	3.7%	70% S.U.
1-2	0.7	55	45	2.5	80
2-3	0.4	45	55	2.4	100
3-4	0.3	44	56	1.8	100
4-5	0.5	42	58	1.5	100
5-6	1.3	34	66	3.0	80
6-7	5.4	34	66	4.4	57
7-8	8.7	38	62	3.5	74
8-9	6.6	48	52	5.2	78
9-10	5.4	50	50	7.4	69
10-11	5.6	48	52	8.4	69
11-12	5.3	47	53	6.4	67
12-1 pm	5.3	50	50	6.5	70
1-2	5.5	50	50	5.4	71
2-3	6.3	51	49	4.8	64
3-4	7.8	56	46	2.6	69
4-5	9.3	58	42	2.2	55
5-6	7.8	57	47	2.6	61
6-7	4.7	54	46	2.6	75
7-8	3.2	53	47	1.5	60
8-9	2.9	54	46	1.5	56
9-10	2.5	58	42	1.2	44
10-11	2.2	58	42	3.8	73
11-12	1.6	58	42	3.7	73

High Day of Week Factor " 50

High Month of Year Factor "

TABLE 5 - T.H. 494 HOURLY TRAFFIC BREAKDOWN

I 494 S. of T.H. 12

Hour	Hourly % Of ADT	Hourly Directional Distribution		Hourly HCADT % of Hourly ADT	HCADT Split Single Unit - Semi's
		N.B.	S.B.		
12-1 am	0.9 %	57%	43%	3.7 %	70% S.4
1-2	0.5	49	51	2.5	80
2-3	0.3	49	51	2.4	100
3-4	0.3	43	57	1.8	100
4-5	0.3	42	58	1.5	100
5-6	1.3	37	63	3.0	80
6-7	5.6	39	61	4.4	57
7-8	10.0	42	58	3.5	74
8-9	6.4	49	51	5.2	78
9-10	5.0	53	47	7.4	69
10-11	4.7	53	47	8.4	69
11-12	5.0	52	48	6.4	67
12-1 pm	4.8	51	49	6.5	70
1-2	5.2	49	51	5.4	71
2-3	5.5	50	50	4.8	64
3-4	7.2	55	45	2.6	69
4-5	9.6	60	40	2.2	55
5-6	8.7	60	40	2.6	61
6-7	5.4	52	48	2.6	75
7-8	3.7	53	47	1.5	60
8-9	3.0	47	53	1.5	56
9-10	2.8	45	55	1.2	44
10-11	2.2	49	51	3.8	73
11-12	1.4	51	49	3.7	73

High Day of Week Factor =

High Month of year Factor =

TABLE 6 - T.H. 18 HOURLY TRAFFIC BREAKDOWN

DIRECTIONAL
DISTRIBUTION

Hour	SOUTH OF T.H. 12		NORTH OF T.H. 12	
	N.B.	S.B.	N.B.	S.B.
12-1 am	68	32	61	39
1-2	65	35	58	42
2-3	71	29	61	39
3-4	65	35	51	49
4-5	67	37	49	51
5-6	49	51	41	59
6-7	55	45	41	59
7-8	43	57	44	56
8-9	69	31	44	56
9-10	65	35	46	54
10-11	64	36	46	54
11-12	63	37	48	52
12-1 pm	57	43	49	51
1-2	56	44	49	51
2-3	60	40	50	50
3-4	68	32	53	47
4-5	69	31	53	47
5-6	66	34	51	49
6-7	67	37	51	49
7-8	64	36	46	54
8-9	69	31	45	55
9-10	66	34	61	39
10-11	64	36	55	45
11-12	66	34	61	39

TABLE 7 - T.H. 100 HOURLY TRAFFIC BREAKDOWN

DIRECTIONAL
DISTRIBUTION

Hour	SOUTH OF T.H. 12		NORTH OF T.H. 12	
	N.B.	S.B.	N.B.	S.B.
12-1 am	62%	38%	62%	38%
1-2	58	42	63	37
2-3	57	43	62	38
3-4	58	42	51	49
4-5	56	44	38	62
5-6	49	51	36	64
6-7	51	49	35	65
7-8	58	42	39	61
8-9	59	41	40	60
9-10	57	43	43	57
10-11	56	44	46	54
11-12	56	44	51	49
12-1 pm	55	45	50	50
1-2	55	45	51	49
2-3	55	45	52	48
3-4	56	44	55	45
4-5	57	43	56	44
5-6	58	42	55	45
6-7	57	43	53	47
7-8	56	44	51	49
8-9	58	42	59	41
9-10	59	41	62	38
10-11	57	43	58	42
11-12	58	42	62	38

Table 8 I-394 Eastbound non-HOV Volumes, A.M. Peak Hour

Destinations Origins	1	2	3	4	5	6	7	8	9	10	11	12	13
1	580	190	6	130	226	48	112	33	15	30	15	15	15
2	280	110	7	38	148	34	23	15	30	80	11	14	10
3		260	27	145	198	34	72	31	19	263	16	20	20
4			80	95	95	18	16	35	25	80	2	2	2
5				77	89	20	17	14	12	9	0	2	0
6					84	56	139	0	45	85	7	11	13
7						230	368	87	254	284	34	37	26
8							188	25	33	64	28	33	29
9								260	575	935	170	188	157
10									192	475	70	78	85

ORIGINS

- I-394 Mainline West End
- T.H. 101
- I-494 C-D System
- Plymouth Rd.
- Ridgedale Drive
- County Rd. 73
- County Rd. 18 C-D System
- Louisiana Avenue
- T.H. 100 C-D System
- Penn Avenue

DESTINATIONS

- I-494 C-D System
- Plymouth Rd.
- Ridgedale Drive
- County Rd. 73
- County Rd. 18 C-D System
- Louisiana Avenue
- T.H. 100 C-D System
- Penn Avenue
- Wayzata Blvd.
- I-94 (NB & SB)
- Hawthorne Avenue
- 6th St. N. and 6th St. Garage
- Washington Ave., 4th St., 5th St. Garage

Table 9 Morning Peak Hour Volumes on Eastbound C-D Road Systems

Destinations Origins	1	2	3	4	5	6	7	8	9	10	11	12
1	95	455	310	0								
2		340	40	45								
3				310								
4				750								
5						260	580	0				
6								645				
7								445				
8								230				
9									450	650	450	0
10										365	250	0
11												825
12												1460

ORIGINS

1. I-394 Mainline
2. Parkers Lake Rd.
3. S.B. I-494
4. N.B. I-494
5. I-394 Mainline
6. S.B. Co. Rd. 18
7. N.B. Co. Rd. 18
8. Boone Avenue
9. I-394 Mainline
10. Turner's Cross Road
11. S.B. T.H. 100
12. N.B. T.H. 100

DESTINATIONS

1. Parkers Lake Rd.
2. S.B. I-494
3. N.B. I-494
4. I-394 Mainline
5. Ford Rd.
6. S.B. Co. Rd. 18
7. N.B. Co. Rd. 18
8. I-394 Mainline
9. Turner's Cross Road
10. S.B. T.H. 100
11. N.B. T.H. 100
12. I-394 Mainline

Table 10 Peak Hour Ramp Volumes for the Eastbound Priority Roadway

Ramp	Ramp Type	Ramp Volumes	
		Carpools	Buses
I-494 C-D	ON	375	25
Ridgedale Dr.	ON	35	3
Co. Rd. 73	ON	35	3
Co. Rd. 18 C-D	ON	160	10
Louisiana Ave.	ON	175	11
T.H. 100 C-D	ON	290	17
I-94	OFF	420	7
3rd Avenue	OFF	650	62

Directional Breakdown		Carpools	Buses
I-494 C-D	EB -- EB	200	13
	NB -- EB	125	9
	SB -- EB	50	3
Ridgedale/Ply	NB -- EB	12	1
	SB -- EB	23	2
CSAH 73	NB -- EB	17	1
	SB -- EB	18	2
CSAH 18 C-D	NB -- EB	65	4
	SB -- EB	95	6
Winnetka/Louis	NB -- EB	128	8
	SB -- EB	47	3
TH 100 C-D	NB -- EB	185	11
	SB -- EB	105	6
		1070	69